REMARKS

Claims 1-3, 8, 11, 12, 15, 16, 19-21 and 23 were rejected under 35 U.S.C. § 102(e) as being anticipated by Raphael et al. (U.S. Patent No. 6,614,626, hereinafter Raphael).

Raphael discloses an actuator arm that has a notched leading edge. Airflow in the disc drive flows past the notched leading edge and is divided into several smaller airstreams by the notches. The smaller airstreams flow over the actuator arm and are combined on the downstream side of the actuator arm. By breaking the large airstream into smaller airstreames, the notched edge reduces the disturbance to the actuator arm when the airstreams are recombined on the downstream side of the actuator arm.

Claims 1-3 and 8

Independent claim 1 is directed to a data storage device that includes a motor and at least one moveable medium coupled to the motor. The medium is moved by the motor and thereby generates a turbulent airflow. At least one internal surface in the data storage device comprises at least two grooves. Each groove has a groove axis oriented substantially perpendicular to a mean airflow direction. Each groove is also separated from the other groove axis in a direction that is substantially parallel to the mean airflow direction. The orientation of the grooves is such that the interaction between the internal surface and the turbulent airflow is reduced.

The invention of claim 1 is not shown or suggested in Raphael. In particular, Raphael does not show grooves with groove axes that are separated in a direction that is substantially parallel to the mean airflow direction. In Raphael, the notched leading edge has grooved axes that run vertical to the actuator arm. As described in Raphael, the airflows over the actuator arm from the leading edge to the trailing edge of the arm. The mean

airflow in Raphael does not flow down the leading edge of the actuator arm, but instead flows across it. Thus, the mean airflow does not move from one groove to the next groove on the leading edge.

In claim 1, on the other hand, the mean airflow flows over the at least two grooves since the two grooves are separated in a direction that is substantially parallel to the mean airflow direction. By having grooves positioned in this manner, the invention of claim 1 helps to reduce the interaction of the vortices in the airflow with the surface.

Note that this is substantial different from the way in which Raphael works. Instead of reducing the interaction between the surface of the leading edge and the airstream, Raphael's leading edge directly interacts with the airstream to change the airstream so that it is divided into smaller airstreams. The invention of claim 1, on the other hand uses the grooves in a surface to reduce the interaction between the internal surface and the turbulent airflow.

Since the grooves in Raphael do not have groove axes that are separated from each other in a direction that is substantially parallel to the mean airflow direction, Raphael does not show or suggest the invention of claim 1 or claims 2, 3 and 8, which depend therefrom.

Claims 11, 12, 15 & 16

Independent claim 11 is directed to a surface for a component in a disc drive. The surface includes a first groove having a groove axis that is substantially perpendicular to a direction of expected mean airflow. A second groove is proximate the first groove and has a groove axis that is substantially perpendicular to the expected mean airflow and that is separated from the first groove axis in a direction that is substantially parallel to the expected mean airflow. The first and second

grooves cooperate to reduce interaction between vortices in the airflow and the surface.

The invention in claim 11 is not shown or suggested in Raphael, because Raphael does not show a first and second groove positioned such that the groove axis of the first groove and the groove axis of the second groove are separated in a direction that is substantially parallel to the expected mean airflow. As noted above for claim 1, the mean airflow in Raphael passes over the actuator arm after passing by the leading edge. As such, the groove axes on Raphael are not separated in a direction that is substantially parallel to the expected mean airflow. In addition, the leading edge in Raphael interacts with the laminar airflow to divide it into smaller airflows. Thus, instead of reducing the interaction between vortices in the airflow and the surface, Raphael purposely interacts with the airflow to form smaller airflows.

Since Raphael does not provide groove axes that are separated in a direction is substantially parallel to the expected mean airflow, it does not show or suggest the invention of claim 11, or claims 12, 15, and 16, which depend therefrom.

Claims 19-21 & 23

Independent claim 19 is directed to a disc drive for storing and accessing data. The drive includes a moving medium that generates an airflow having eddies in the disc drive. An excitation reduction means defines a surface in the disc drive for reducing the excitation of the surface by causing eddies in the airflow to be moved away from the surface.

Raphael does not show or suggest the invention of claim 19, because it does not show an excitation reduction means that is capable of causing eddies in the airflow to be moved away from a surface. Under Raphael, the leading edge of the actuator arm divides a laminar flow into smaller laminar flows, such that when the smaller laminar flows are combined, they produce less

excitation of the actuator arm. Thus, Raphael is not moving eddies away from a surface, but instead is forming smaller laminar flows that when combined with other laminar flows produce less disturbance.

Since Raphael does not cause eddies in the airflow to be moved away from a surface, it does show or suggest the invention of claim 19 or claims 20, 21 and 23.

Conclusion

In light of the above remarks, claims 1-3, 8, 11, 12, 15, 16, 19-21 and 23 are form for allowance. Reconsideration and allowance of the claims is respectfully requested.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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